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upon a reduction in the tariff upon raw material, knowing that their combinations were sufficient to protect them against any foreign competition in refined sugars.<sup>1</sup> As the tariff stands today it protects us in some degree from international combinations which could not be formed with the barrier of a tariff against foreign products.

In some cases the repeal of custom duties would virtually destroy not only the combination but the industry. Such an instance is that of the tin-plate industry. This organization was formed in December 1898, with a capital of 50 millions of dollars. The tin-plate maker has never been able to make his product for less than \$2.75 per box, of 108 No. IC 14 x 20 plates.<sup>2</sup> The duty is now \$1.62 on the single box. The English makers are selling the same thing in Liverpool for \$2.30. The price quoted above for the American product is about cost. Since the formation of the combination the quotation has been raised to \$3.80. The repeal of the tariff would destroy the combination and the industry.

It is not in the case of tin or products of this character that the people complain, but in the monopolization of food products and necessities. Any repeal of tariff duties in these instances will not break up the combinations now controlling the output of milk, crackers, oil, clothes, coffins, etc. The problem is by no means so easy as that.

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### PROFESSOR PATTEN'S PSYCHOLOGICAL DOCTRINES.<sup>3</sup>

PROFESSOR PATTEN'S chapter on "theory" is in substance a summary of the theory outlined in his *Theory of Social Forces*. The author's problem is to explain the part played by consciousness in human activity, in the adjustment of the organism to the environment. He conceives this to be effected by the relations established between two fundamentally distinct kinds of ideas—sensory and motor. The sensory ideas are created by incoming nervous currents set in motion by the environment; the motor ideas excite the outgoing currents

<sup>1</sup> *Trust Investigation*, New York, 1897, pp. 120, 121.

<sup>2</sup> *Yale Review*, November 1898.

<sup>3</sup> *The Development of English Thought: A Study in the Economic Interpretation of History*. By SIMON N. PATTEN. New York: The Macmillan Company, 1899.

which create movements adjusting the organism to what it knows of the environment. The sensory and motor ideas are associated with each other, the sensory idea calling up by its presence its appropriate motor idea in conformity with the requisites for survival. The causal order is therefore as follows: external stimulus, sensory idea, motor idea, motor reaction. The mental mechanism is thus a static fact or datum, the motor energy coming from the environment.

This dualistic scheme of mental facts, outlined clearly enough at the beginning of the chapter, and even more clearly in the *Theory of Social Forces*, breaks down as soon as the author begins to explain its operation in detail. The motor ideas suffer most. The absoluteness of the author's separation of sensory and motor ideas gives the term "motor" a peculiar significance not recognized by psychologists generally. When a psychologist of the modern school speaks of an idea as motor he means that any idea, whether of a movement or of a static object, may be the exciting cause of a motor reaction, perhaps also the product of such a reaction. But Professor Patten's motor ideas are exclusively pictures of movements to be performed by the organism. On his theory "The series of acts that lead to the acquisition of an object are pictured in consciousness as distinctly as the series of ideas that enable an observer to distinguish one object from another" (p. 2). It is these motor pictures which, if I understand him aright, must be in the possession of every individual. Yet they are not, as one might infer, innate or inherited. "It is not the ideas that are inherited but the motor mechanisms that excite activity when these ideas are present" (p. 3). This makes their origin something of a mystery. They are not *ex hypothesi* the reflection of environment, nor innate or inherited. Either then they are created by the out-going nervous currents or they are the reports, after the fact, of the movements of our bodies. In either case the motor reaction precedes its picture and is not caused by it; and if so, the adjustment to environment is effected not by the association of sensory ideas with ideas of movement but by an immediate connection between the sensory idea proceeding from an external object and the motor reaction itself. This is what is meant by psychologists in speaking of the motor aspect of ideas and it is what the author himself seems usually to have in mind. The motor "idea" which appears in his preliminary classification is forthwith dropped out of sight. In its place he speaks of motor "powers," "mechanisms," and "reactions," which seem to be stimulated immediately by the

appearance of the appropriate sensory idea in consciousness, without the intervention of their own image. As if to leave no doubt that he has abandoned the motor idea he makes a distinction, within the sensory ideas, between clear and vivid ideas and defines the vivid as those which excite motor reactions (p. 15). The specifically motor idea is, therefore, a fiction.

He is equally unsuccessful in this account of the peculiarities of the sensory ideas. We are led at first to regard the sensory idea as the passive imprint of environment. They are determined, he tells us (p. 4) "by the bare isolated phenomena of the external world," while motor reactions are determined by the requisites for survival. But two pages further we learn that the sensory ideas are also determined by the requisites for survival. A people circumscribed by a local environment have little use for fine sensory distinctions, little need for increasing the number of their sensory ideas; as the result of this their development is motor rather than intellectual. Again he tells us (p. 13) that character (inherited motor tendencies) in seeking to master nature increases the number of "conscious modifications of external conditions." Pure sensory development (p. 15) tends to give an equal emphasis to all the ideas coming from the outer world. But pure sensory development seems never to occur, for the conditions of survival emphasize certain objects and relations and thus create the ideals of the race. The result of these statements and others that could be cited to the same effect is that the sensory ideas do not after all faithfully represent the external facts but are influenced at every step by the necessities of organic activity.

The dualism of sensory and motor ideas was not, of course, originally conceived by Professor Patten. It is substantially a re-statement of the old dualism of cognitive and motive powers, of intellect on the one hand and volition on the other, which still lingers in psychology; this dualism of intellect and volition is a later development out of a tripartite division of mind into knowledge, feeling, and will; and this too, may be regarded as a remnant of the old faculty-psychology which treated the mind as though it were a congress of independent personalities in the guise of separate faculties. But though psychologists continue to treat intellect and will as more or less distinct none of them would now think of setting up separate sensory and motor elements after the manner of Professor Patten. Recent psychology has brought out into strong relief the factors of attention and interest. It

has shown that not only deliberative reasoning but sense-perception is influenced at every step by the selective activity of attention and that the selection is governed by the interests and desires of the agent. As Professor James puts it, "knowing is always for the sake of doing." Knowledge is not the passive reception of impressions from external sources but a selective activity governed by subjective interests. It is, therefore, impossible to separate the knowing and willing activities since each presupposes the other.

In the chapter of "Theory" the factor of attention seems to be entirely overlooked, but some provision is made for it in the *Theory of Social Forces*. In that work the author introduces the metaphor of a "society of centers" in order to define his conception of mind. The society seems to be a hierarchy of higher and lower centers. A "self-conscious center" presides over the hierarchy (or rather bureaucracy) and directs the movements of the organism. He is assisted in his labors by a multitude of lower centers who receive the information coming from the outer world and pass it on to their superiors after having added certain information of their own, relative to the matter in hand, inherited from the past experience of the race. In this manner the "self-conscious center" receives his information from the outer world properly selected, arranged and annotated. One is not surprised to learn that this psychical civil service is an invention of the author, though it is based, he tells us, upon the facts of the nervous system. Unfortunately he regards the nervous system as too simple and the facts too familiar to need description; and the reader is therefore unable to pass upon the sufficiency of the neural facts as a basis for the author's theory of mind. But in view of the difficulties which beset the neurologists themselves in the attempt to define the relations between the higher and lower nerve-centers and between the different parts of the cortex it is safe to say that nothing is certainly known of the nervous system which will justify the author's complicated system of relations between the higher and lower centers. And of this we may be quite sure, that no neurological basis has yet been discovered for his "self-conscious center."

One is not surprised after this feature of the theory to learn that the author is an associationist. The later associationists have preferred to talk in terms of brain and nervous-system rather than of mind. Since the brain is something physical they seem to feel themselves on more solid ground. But their conception of brain activity is often

quite as theoretical and based as little upon physiological investigation as that of Professor Patten, though rarely so elaborate and ingenious. Professor Patten acknowledges allegiance to no modern author. His position, he tells us (*Theory of Social Forces*, p. 29), is that of Locke and Hume. He differs from them only in holding that knowledge is not directly the product of experience, but of experience modified by the mental mechanism, which is the inherited result of past experience. In this he agrees quite closely with Spencer; and, in fact, the general tone of his work is distinctly Spencerian. It shows no traces of more recent psychology except in the attention paid to motor activity. Much of his language on this subject would harmonize well with that of the modern "dynamic" school of psychology; but the tendencies of this school are quite at variance with his general associational point of view.

The source of energy for the mental and physiological mechanism is to be found ultimately in environment. The environment holds much the same relation to humanity as the sun to the earth. Not all the energy upon the earth is directly communicated by the sun though the latter is ultimately the sole source. Similarly human activity is not to be explained wholly by reference to present external conditions. We have to reckon with hereditary habit, constituting a self seeking to realize a purpose of its own through present conditions. But hereditary habit is ultimately nothing more than the product of ancestral environment; it is the form into which, in the course of evolution, we have been moulded by the forces of nature. Human nature is a static fact. It has no possibilities of change or development within itself but develops only in obedience to the changing conditions imposed by environment. Upon this feature of the author's theory is based the distinctive purpose and method of the whole book. He undertakes to show that the development of English thought was not in any degree a dialectic or logical development but due in every detail to the successive changes in environment.

But though he sets out to explain the man by his environment, he at the same time defines the environment with reference to the man. By environment he means "the grand result of the natural phenomena of succeeding ages" (p. 10); but he distinguishes the present environment as "the definite group of conditions that is essential to the welfare of the race," that is (to turn to the *Theory of Social Forces*,

p. 10), "the environment of an organism is not the sum of all the objects surrounding it." There may be "an indefinite number of environments each giving certain possibilities to animals adjusted to them" (*ibid.*). The mass of objective conditions, he tells us, is indifferent. But, if this be true, human activity cannot be wholly "due to natural conditions" (p. 11); for in that case nothing within the range of the organism ought to be indifferent. Every wave of light or sound, no matter how uninteresting, should have its effect in determining the activity of the organism. It is only when we define the environment with reference to the needs and interests of the organism that any features could be conceivably indifferent. And this is the definition which the author seems to have in mind. If there is ever a time in the history of the organism when the environment is not defined by the selective activity of the organism it ceases after the first step has been taken. The environment is thereafter to some degree a function of the organism. It cannot, therefore, be set up as the sole factor in the organic development.

This confusion in theory finds its way into the author's description of facts. Natural conditions and the products of human intelligence are grouped together under the single conception of "environment." Climatic conditions appear in the same class with gunpowder, printing, glass windows, and woollen clothing. Family life is due to the appearance of glass windows and chimneys, and not the latter to the needs of family life. The author deals with human inventions as if they were gifts of nature. He ignores the fact they are the outcome of individual thought and overlooks the not impossible hypothesis that the happy discovery of the individual may be nothing but the final outcome of the growing and conscious needs of the community. The reference of the man to his environment reaches its climax in the humorous explanation of the modern Englishman by his bath. "An unbathed Englishman is a sensualist; a bath turns him into a gentle optimist. The bath tub is the parent of that English optimism of which the last two centuries have seen so many examples" (192). As if bathing had been any more of a possibility in the last two centuries than at any other time in the history of the race.

The associative relations between the sensory and motor ideas (and through them the relation of the organism to its environment) are determined by the requisites for survival. It is hardly correct to say that

the author is inconsistent in his conception of the "requisites for survival." He seems rather to think that the conception demands no analysis. Yet it is not easy to determine from his account of race-development just what constitutes the conditions of survival or how they operate as a factor. A people begins its career, he tells us, in a local environment where the conditions for survival are simple and easily learned and call for motor rather than for sensory development. Here the contest is chiefly between man and man. Progress brings the race into a more extended environment where the contest is with nature rather than with man. The complexity of natural conditions then demands that men become "conscious, cautious, and analytic"—a sensory rather than a motor development; and this includes the development of science and philosophy. "Their sensory powers thus become the requisites for survival, and develop with as much luxuriousness and wastefulness as do the motor powers in a local environment" (p. 7). But just why, or how, or in what sense, the author does not explain. It is true, indeed, that the "food, clothing, and shelter come from a great variety of sources and the materials from which they are made are many times reconstructed before they assume their final form." But unless the man himself, his nature and wants, has changed, why does he require, for mere "survival," a different line of goods than formerly? It looks as if these increased wants were due, not merely to the increased complexity of his environment, but to the luxurious development of his sensory powers, producing a taste for adornments rather than for necessities. And the author seems to think as much; for he tells us that the final result of all this sensory development is that men "see less clearly than their ancestors the few essentials upon which race survival depends." But he nowhere states what these "essentials" are. He seems in the same paragraph to regard the higher cultural development as "requisite for survival," and yet, on the whole, not really essential.

The conception of survival suggests certain physical conditions to which everyone must conform in order to survive, and conformity to which will ensure survival. It assumes, on the ground that men are identical in their physiological structure, that the conditions for survival must be the same for all. But it has been impossible so far to formulate the conditions. No one has yet determined, for instance, the minimum in kind and quantity of food supply necessary for the bare continuance of life. Nor on the other hand is there any object so



trifling that it may not be for some one a requisite for survival. Every disappointment or failure tends to lower one's vitality and no one can say how important the object must be for the shock of failure to prove eventually fatal. The immediate fact then is that the requisites for survival vary with the impulsive nature of the individual and with the cultural stage reached by the community. The necessities of a European are different from those of a Hottentot. The different stages of evolution may indeed be conceived in the light of a constant primitive impulse toward the mere continuance of existence, modified by the variations in external conditions; but to accept this as an explanation we need to have our unit of vitality defined. "Requisite for survival" means in itself nothing, since it varies with the differences to be explained.

Professor Patten fails, therefore, to carry out consistently the theoretical lines marked out in his preliminary statement. His problem is human activity. To render this intelligible he postulates a mental mechanism, a distinctively passive and mechanical instrument, composed of two orders of parts; the relations between the parts have been determined by the conditions of survival present in the past environment of the race; and the machine stands ready to react upon the various changes of external conditions in a definite and pre-determined manner. But in working out his theory the dualistic scheme of elements breaks down, the sensory elements are influenced by the conditions of motor activity, the environment is defined by the selective activity of the organism, and the requisites for survival are also not without reference to the needs of the organism. In this manner he introduces among his data the fact to be explained. At the same time he gradually changes his position from that held by one school of psychology to that held by their opponents and attempts to hold both together. He begins with the associationists, whose tendency is to explain the self by the environment; he presently takes his stand among those who tend to explain the environment as a function of the self.

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